

# DISTRIBUTION OF AIR POLLUTION IN A HIGHLY INDUSTRIALIZED AREA

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**Background And Aims:** The area of Campo de Gibraltar (1528,6 km<sup>2</sup> southern Spain) is a highly industrialized area, where PM<sub>10</sub> have a high concentration of heavy metals. It consists of 7 municipalities, whose population is 264,620 inhabitants. The aim of this study is to characterize air pollution (PM<sub>10</sub>) in that area

**Methods:** Data were collected daily from 5 automatic stations measuring PM<sub>10</sub> concentration, in addition to daily wind speed and direction at a meteorological station in the same area

**Results:** The nearest stations to the industries are showing higher mean values of PM<sub>10</sub> concentrations (46.3 µg/m<sup>3</sup> 95%CI = [45.29-47.3] and 41.00 µg/m<sup>3</sup> 95%CI=[40.12-41.9]), while further away had the lowest (33.96 95%CI=[32.84-35.07] and 34.39 95%CI=[33.26 to 35.52]). Except for one case, the threshold of 50 µg/m<sup>3</sup> was exceeded more than 35 times a year (all years and stations). Moreover, more frequent winds in the area are easterly winds followed by westerly winds. The frequency of other wind directions is very low. For all stations, PM<sub>10</sub> concentrations are higher when the wind is blowing from East. The number of exceedances of the threshold value (50 µg/m<sup>3</sup>) is more than double when the wind blows from East than when blows from West (all stations considered)

**Conclusions:** PM<sub>10</sub> concentration is higher near of the industries. Regardless the location, the pattern of PM<sub>10</sub> concentration in the study area depends of the wind direction